

Claims

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1. Recombinant DNA molecule comprising
 - (a) regulatory sequences of a promoter active in plants;
 - (b) operably linked thereto a DNA sequence encoding a protein with the biological activity of a 2-deoxyglucose-6-phosphate (2-DOG-6-P) phosphatase; and
 - (c) operably linked thereto regulatory sequences which may serve as transcription termination and/or polyadenylation signals in plants.
 2. The recombinant DNA molecule of claim 1, wherein the DNA sequence which encodes a protein with the biological activity of a 2-DOG-6-P phosphatase is selected from the group consisting of
 - (a) DNA sequences comprising a nucleotide sequence which encodes the amino acid sequence indicated in SEQ ID NO. 2;
 - (b) DNA sequences comprising the nucleotide sequence indicated in SEQ ID NO. 1;
 - (c) DNA sequences comprising a nucleotide sequence which hybridizes to a complementary strand of the nucleotide sequence of (a) or (b);
 - (d) DNA sequences comprising a nucleotide sequence which is degenerate to a nucleotide sequence of (c), and
 - (e) DNA sequences being a derivative, analogue or fragment of a nucleotide sequence of (a), (b), (c) or (d) and encoding a protein possessing 2-DOG-6-P phosphatase activity.
 3. The recombinant DNA molecule of claim 1 or 2, wherein the DNA sequence is derived from yeast.
 4. The recombinant DNA molecule of any one of claims 1 to 3, wherein the promoter is the 35S CaMV promoter.
 5. Vector comprising a recombinant DNA molecule of any one of claims 1 to 4.
 6. The vector of 5 which contains at least one further recombinant DNA molecule.
 7. The vector of claim 6, wherein the further recombinant DNA molecule contains a DNA sequence which encodes a peptide, protein, antisense-, sense-RNA, viral RNA or ribozyme.

8. Host cell containing a recombinant DNA molecule of any one of claims 1 to 4 or a vector of any one of claims 5 to 7.
9. Kit comprising a recombinant DNA molecule of any one of claims 1 to 4 or a vector of any one of claims 5 to 7 and optionally 2-deoxyglucose or a chemical compound functionally equivalent to 2-deoxyglucose.
10. Process for selecting transformed plant cells, comprising the following steps:
(a) obtaining plant cells;
(b) introducing a recombinant DNA molecule of any one of claims 1 to 4 or a vector of any one of claims 5 to 7 into these plant cells; and;
(c) selecting the successfully transformed plant cells on 2-deoxyglucose-containing media or on media containing a chemical compound which is functionally equivalent to 2-deoxyglucose.
11. The process of claim 10, wherein the vector of any one of claims 5 to 7 is transferred to plant cells via *Agrobacterium tumefaciens*.
12. The process of claim 10, wherein the recombinant DNA molecule of any one of claims 1 to 4 or the vector of any one of claims 5 to 7 is transferred to plant cells by particle bombardment.
13. Transgenic plant cell containing a recombinant DNA molecule of any one of claims 1 to 4 or a vector of any one of claims 5 to 7 or produced according to the process of any one of claims 10 to 12.
14. Plant cell of claim 13, which contains at least one further foreign gene.
15. Plant tissue comprising plant cells of claim 13 or 14 or produced according to the process of any one of claims 10 to 12.
16. Transgenic plant containing a plant cell of claim 13 or 14 or produced according to the process of any one of claims 10 to 12.
17. Harvest products of the plant of claim 16 comprising plant cells of claim 13 or 14.
18. Propagation material of the plants of claim 16 comprising plant cells of claim 13 or 14.

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19. Use of a DNA molecule which comprises a DNA sequence as defined in any one of claims 1 to 3, of a recombinant DNA molecule of any one of claims 1 to 4 or of a vector of any one of claims 5 to 7 for producing transgenic plants, plant cells and/or tissue.
20. Use of a DNA molecule which comprises a DNA sequence as defined in any one of claims 1 to 3, of a recombinant DNA molecule of any one of claims 1 to 4 or of a vector of any one of claims 5 to 7 as selectable marker in plant cell and tissue culture and/or plant breeding.

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